

REMARKS

Applicant thanks the Examiner for the very thorough consideration given the present application.

Claims 1-10 are now present in this application. Claims 1, 4 and 8 are independent.

Claims 1, 2, 3, 4 and 8 have been amended. Reconsideration of this application, as amended, is respectfully requested.

Rejection Under 35 U.S.C. §§ 102/103

Claims 8 and 10 stand rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,031,801 to Ishikawa et al. (Ishikawa). This rejection is respectfully traversed.

Ishikawa

Ishikawa is directed to a disc playback apparatus for playing back a disc on which data have been recorded (see Abstract of Ishikawa). The Applicant has examined the Ishikawa Patent extensively to determine whether Ishikawa is in any way directed to controlling or changing a recording speed while recording input data, or rather, whether Ishikawa is directed to operations performed during playback only. Ishikawa is directed to operations performed

during playback only. Since Ishikawa is directed to operations performed during playback only, the Ishikawa reference cannot read on claims reciting features or functions associated with recording, for example, recording input data, measuring a recording speed, or comparing a recording speed. ✓

The Ishikawa patent application was filed on July 9, 1997, and pertains only to CD-ROM. This is not a rewritable format. In fact, the first of the rewritable formats came to market in the summer of 1998. In other words, recording input data on a recording medium (though not disclosed in Ishikawa) would not have been a likely issue at the time of the Ishikawa patent application.

In general, during recording, a drive's laser follows a microscopic groove to ensure consistent spacing of data in a spiral track. The walls of the microscopic groove are modulated in a consistent sinusoidal pattern so that a drive can read and compare it with to an oscillator for precise rotation of a disc. This modulated pattern is called a "wobble groove", because the walls of the groove appear to wobble from side to side. This signal is used only during recording, and has no effect on the playback process. Among the families of formats (especially DVD) only recordable media use wobble grooves. ✓

Therefore Ishikawa fails to disclose or suggest recording input data on a recording medium in CAV mode or measuring a recording speed of input data on said recording medium, or comparing the recording speed with a threshold

speed, as recited in independent claim 8, as amended. Claim 10 depends on claim 8, and therefore is patentable at least for the reasons stated with respect to independent claim 8. Reconsideration and withdrawal of this art grounds of rejection are respectfully requested.

Rejection Under 35 U.S.C. 103

Claim 9

Claim 9 stands rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 8 above, and further in view of U.S. Patent No. 5,946,279 to Okada et al. (Okada). This rejection is respectfully traversed.

Applicant respectfully submits that claim 9 depends on claim 8. Ishikawa, argued above with respect to independent claim 8, fails to disclose or suggest recording input data on a recording medium in CAV mode or measuring a recording speed of input data on said recording medium, or comparing the recording speed with a threshold speed, as recited in independent claim 8, as amended. Okada cannot fill this vacancy. Since neither Ishikawa, nor Okada discloses or suggests the above-recited features of independent claim 8, Ishikawa, in view of Okada, cannot render claim 9 obvious to one of ordinary skill in the art. Reconsideration and withdrawal of this art grounds of rejection are respectfully requested. ✓

Claims 1-3

Claims 1-3 stand rejected under 35 U.S.C. 103(a) as being unpatentable over either Mashimo or Maeda further considered with Ishikawa, and all further considered with Ho et al. (Ho) and Official Notice. This rejection is respectfully traversed.

Central to the issue in this rejection is whether a method or device in either the Mashimo or Maeda references discloses or suggests a first step of beginning recording of input data in CAV mode, and then switching from recording input data in CAV mode, and then beginning to record data in CLV mode. [Applicant respectfully submits that neither of these references disclose or suggest such a feature.] Further, Ishikawa, argued above with respect to independent claim 8, does not disclose or suggest recording input data in any mode whatsoever. Ho, like Ishikawa, is directed to playback only, and therefore cannot fill this vacancy. Mashimo and Maeda are further discussed below:

Mashimo

Mashimo simply discloses a method or apparatus for determining whether the disc inserted was recorded in CLV mode or CAV mode. Particularly, the apparatus of Mashimo is capable of discriminating whether the information signal recording disc is a CAV disc or a CLV disc and having an arrangement to switch a carrier reference frequency of a frequency modulator

of the information signal recording apparatus from one frequency corresponding to one of the discs to another frequency corresponding to another disc responsive to the result of the discrimination (Mashimo, Col.1, line 66- Col.2, line 9). This determination is made when a disc is first inserted. However, Mashimo provides no capability of first beginning a recording in CLV mode, and then switching to CAV mode while recording.

Therefore, Mashimo fails to disclose or suggest recording input data to a recording medium in CAV mode and changing the recording mode between CAV and CLV according to the result of the comparing step, as recited in independent claim 1, as amended.

Maeda

Maeda discloses disk-type recording medium which can be used for recording and reproducing data thereon with a high data-transfer rate by the ZCLV method when being used for reproducing or recording a series of data (e.g., image data) as well as for recording and reproducing data thereon by high-speed accessing by the ZCAV method when being used in a computer. This disk can be commonly applied in both systems (Maeda, Col.22, lines 15-22).

Further, Maeda discloses a disk recording and reproducing device which is capable of recording and reproducing data on a disk with high-speed

accessing by the ZCAV method. The disk-type recording medium whereon data has been recorded by this device, can be used for recording and reproducing data in another device using the ZCLV method. The disk has a complete compatibility between devices adopting different rotation control methods (Maeda, Col.22, lines 37-44). Maeda discloses that it is convenient for one to select either one of two systems of the device according to the application purpose (Maeda, Col.23, lines 15-17).

Further, Maeda discloses that the disk recording and reproducing device is capable of obtaining rotation control information from the disk even in the ZCAV system. Accordingly, the rotation control can be easily conducted without using a special rotation-detector (e.g., rotary encoder). In the device that can selectively use either one of the ZCAV system and the ZCLV system, the rotation controller can be commonly used for two systems (Maeda, Col.23, lines 25-32).

Based on the above-recited portions of Maeda, it is clear that while either of these systems can be selected, and rotations speeds can not be changed once operation has begun using a particular system, there is no provision for switching between systems once recording has begun. Therefore, Maeda fails to disclose or suggest recording input data to a recording medium in CAV mode and changing the recording mode between CAV and CLV according to the result of the comparing step, as recited in independent claim 1, as amended.

Claims 2 and 3 depend on claim 1. Since neither Mashimo, nor Maeda, nor Ishikawa, nor Ho (nor Official Notice) discloses or suggests the above-recited features of independent claim 1, Mashimo or Maeda further considered with Ishikawa, and all further considered with Ho et al. (Ho) and Official Notice cannot render claims 1-3 obvious to one of ordinary skill in the art. Reconsideration and withdrawal of this art grounds of rejection are respectfully requested.

Claim 6

Claim 6 stands rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 1 above, and further in view of Okada et al. (Okada). This rejection is respectfully traversed.

The art as applied to claim 1 fails to disclose or suggest recording input data to a recording medium in CAV mode and changing the recording mode between CAV and CLV according to the result of the comparing step, as recited in independent claim 1, as amended. Okada cannot fill this vacancy. Claim 6 depends on claim 1. Since the art as applied to claim 1 fails to disclose or suggest the above-argued features of independent claim 1, the art as applied to claim 1 cannot render claim 6 obvious to one of ordinary skill in the art. Reconsideration and withdrawal of this art grounds of rejection are respectfully requested.

Claims 4, 5 and 7

Claims 4, 5 and 7 stand rejected under 35 U.S.C. 103(a) as being unpatentable over either Mashimo or Maeda considered with Ishikawa et al. and Okada et al. This rejection is respectfully traversed.

Mashimo or Maeda considered with Ishikawa fails to disclose or suggest recording input data to a recording medium in CAV mode and changing the recording mode between CAV and CLV according to the result of the comparing step, as recited in independent claim 1, as amended, and similarly stated in independent claim 4, as amended. Particularly, Mashimo or Maeda considered with Ishikawa fails to disclose or suggest (a) recording input data to an installed recording medium in CAV mode and (e) changing the recording mode from CAV to CLV based on the comparing step, as recited in independent claim 4, as amended. Okada cannot fill this vacancy.

Claims 5 and 7 depend on independent claim 4. Since neither Mashimo, nor Maeda, nor Ishikawa, nor Okada discloses or suggests the above-recited features of independent claim 4, Mashimo or Maeda further considered with Ishikawa and Okada cannot render claims 4, 5 and 7 obvious to one of ordinary skill in the art. Reconsideration and withdrawal of this art grounds of rejection are respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Percy L. Square, Registration No. 51,084, at (703) 205-8034, in the Washington, D.C. area.

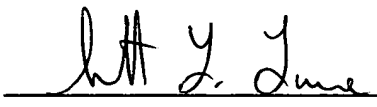
Prompt and favorable consideration of this Amendment is respectfully requested.

Attached hereto is a marked-up version of the changes made to the application by this Amendment.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: Version with Markings to Show Changes Made

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

The claims have been amended as follows:

➤ 1. (Twice Amended) A method of changing a recording mode between CAV (Constant Angular Velocity) and CLV (Constant Linear Velocity), comprising the steps of:

recording input data to a recording medium in CAV mode;

[(a)] reading data encoded in a wobble signal of a physical track reproduced while recording input data to said [a] recording medium in CAV mode;

[(b)] detecting a predetermined signal among the read data;

[(c)] determining a current recording speed based on the predetermined signal;

[(d)] comparing the determined recording speed with a predetermined speed; and

[(e)] changing the recording mode between CAV and CLV according to the result of the comparing step.

2. (Amended) The method set forth in claim 1, wherein said predetermined signal is a sync signal contained in the encoded data.

3. (Amended) The method set forth in claim 1, wherein said detecting step[(b)] detects a period of the predetermined signal.

4. (Twice Amended) A method of changing a recording mode between CAV (Constant Angular Velocity) and CLV (Constant Linear Velocity), comprising the steps of:

- (a) recording input data to an installed recording medium in CAV mode;
 - (b) measuring the frequency of a low-frequency component of a wobble signal, which is generated during said recording input data, said wobble signal being formed along a spiral physical track;
 - (c) comparing the measured frequency with a predetermined frequency;
- and
- (d) determining when to change the recording mode to CLV based on the comparing step.
 - (e) changing the recording mode from CAV to CLV based on the comparing step.

8. A method of changing a rotating mode for recording between CAV (Constant Angular Velocity) and CLV (Constant Linear Velocity), comprising the steps of:

- recording input data on a recording medium in CAV mode;
- [(a)] measuring a recording speed of input data on [a] said recording medium;
- [(b)] comparing the recording speed with a threshold speed, wherein the threshold speed is determined by a stable encoding speed of an encoder or properties of the recording medium; and
- [(c)] changing the rotating mode for recording between CAV and CLV according to the result of the comparing step.